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APPLICATION NO./ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR / PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.

EXAMINER

ART UNIT	PAPER
	15

DATE MAILED:

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Commissioner for Patents

Previous Examiner's Answer has been vacated, in order to show that an Appeal Conference has been held. Also a translation of WO 99/03323 is being provided.

Árpád Fábián Kovács
Primary Examiner
Art Unit: 3671

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/727,134	11/30/2000	Norbert Wolters	8874-US	2924

7590 07/26/2004

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EXAMINER	
KOVACS, ARPAD F	

ART UNIT	PAPER NUMBER
3671	

DATE MAILED: 07/26/2004

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Paper No. 15

Application Number: 09/727,134
Filing Date: November 30, 2000
Appellant(s): WOLTERS ET AL.

Kevin J Moriarty
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 11/13/2002.

(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) Status of Claims

The statement of the status of the claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

(6) Issues

The appellant's statement of the issues in the brief is correct.

(7) Grouping of Claims

Claims s 1-7, 20, 21 stand and fall together.

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) References

PCT WO 99/03323	Wiegert	1-1999 (translation provided)
2777267	Thompson	1-1957
GB 1012154 A	Pottinger et al.	7-1979

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim(s) 1-4, 20-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Wiegert (PCT WO 99/03323).

In re independent claims 1, 2, 20, Wiegert discloses a feeding and picking device for feeding and picking a standing crop's individual plant stalks, the device comprising:

a picking device (10, 11) which separate useable parts from stalks, wherein a rotating about a vertical axis feeding device with outwardly extending fingers (stalk working device ref 21, 22 on fig 2-4; but also ref 20 on fig 4 may be considered) grasps or transports the stalk throughout an effective length of the picking device (as best shown on fig 4), as shown on fig 2, there are number of feeding & picking devices, or at least two are provided;

in re claim 21, a symmetrical line taken along a mid section of the harvesting means, for example from the mid ref 8, the picking and feeding devices are symmetrically positioned to each other in reference to both sides;

in re claim 3, a snapping channel (31) wherein the feeding device covers the snapping channel (as shown on fig 4, the feeding device covers the channel);

in re claim 4, as shown on fig 4, there are gaps between the fingers which are sufficient deep enough to allow the stalk to fit in the gap and thereby transported along or over the snapping channel, similarly as the above stated that the stalk is transported along the effective length of the picking device.

Claim(s) 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wiegert (PCT WO 99/03323), in view of Thompson (2777267) and Pottinger et al (GB 2012154, cited by the applicant).

Wiegert discloses the claimed invention above including the fact the feeding element can be substituted by any other known devices (page 4, 2nd paragraph), however Wiegert does not show or list the claimed alternative feeding device.

Both Pottinger and Thompson disclose known devices for conveying the stalk, for example Thompson shows that the feeding device with finger (fig 1-2, ref 31), wherein the fingers of the upper element (for example ref 37) are directed away from a direction of rotation (as shown on fig 1) and the lower feeding element is beneath the upper feeding element and rotate the same direction as the upper one (fig 2, 3); and similarly Pottinger shows on fig 2 and 4, the same arrangement wherein the upper feeding element (13 or 14, and tines or fingers 10) are directed away from the direction of the feeding element; and the lower feeding element is beneath the upper feeding element and rotate the same direction as the upper one (fig 1).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the feeding device of Wiegert with the alternative feeding device taught by either Pottinger and/or Thompson, in order to improve the lifting

actions and support on stalks which may have been leaned forwardly by the agricultural harvester.

(11) Response to Argument

In response to Applicant's argument that, since the Applicant chose not to refute in application no. 09/721,512 (the Applicant identified it erroneously as 09/751,512) that ref. 22 shown by WO 99/03323 is a chopping device, thus, as Applicant argues, the same element cannot anticipate a rotating feeding element claimed in claims 1, 2 and 20 of the current application (i.e. 09/727,134).

Examiner disagrees that the current application and another application 09/751,512 are claiming the same subject matter (Applicant transposed numbers, the correct number is 09/721,512). Application 09/721,512 requires or claims in addition to a rotating feeding device, a chopping device that chops the plant stalks, and the chopping device which has a chopping radius that overlaps the feeding radius of the rotating feeding device. While the current application only requires a feeding device and no chopping device as specified in application 09/721,512, therefore, it is clear that application 09/721,512 and current application are independent from each other in subject matter they claim. The Examiner of application 09/721,512 clearly had to make an evaluation of the claimed subject matter differently than the Examiner of current application. It is noted that the claimed subject matter of the current application should be evaluated on its merit based on the claimed subject matter and not on another materially independent and/or different application 09/721,512.

It is further noted that unlike what the Applicant argues, the rotating feeding element ref. 22 of WO 99/03323 is capable of conveying the stalks as required by the

claim. It is also noted that the Applicant did not argue the alternate rotating feeding element ref 20 on fig 4 which was also considered in the rejection.

Because application 09/721,512 distinctly claims a chopping element in addition to the rotating feeding device; therefore, the Examiner of the current application was not required to make the same interpretation as the Examiner of application 09/721,512.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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June 16, 2004

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PTO 04-2341

German Patent
Document No. WO 99 / 03323

APPARATUS FOR HARVESTING MAIZE

[Gerät zum Ernten von Mais]

L. Wiegert

UNITED STATES PATENT AND TRADEMARK OFFICE

Washington, D.C. Month Year

Translated by: Schreiber Translations, Inc.

Country	:	Federal Republic of Germany
Document No.	:	WO 99 / 03323
Document Type	:	Document laid open (first publication without search report)
Language	:	German
Inventor	:	L. Wiegert, Ladbergener Strasse 21 D-48346 Osthevern, Federal Republic of Germany
Applicant	:	L. Wiegert, Ladbergener Strasse 21 D-48346 Osthevern, Federal Republic of Germany
IPC	:	A 01 D 45 / 02
Application Date	:	July 14, 1998
Publication Date	:	January 28, 1999
Foreign Language Title	:	Gerät zum Ernten von Mais
English Title	:	**APPARATUS FOR HARVESTING MAIZE**

Abstract

Text in English

Summary

A device for harvesting maize and similar cereals particularly as an attachment for combined harvesters (2) or field harvesters designed with two picking rollers (10, 11) mounted on both the sides of a picking slot (31) and rotating about the axes of rotation (34, 35) in the direction of displacement (F) of the device (1) and is provided with several longitudinal ridges (29, 30), ribs or similar protuberances mounted on the working edges (27, 28) of the picking rollers (10, 11) over their basic roller body (25, 26). The working edges (27, 28) of the picking rollers (10, 11) widely distributed over the basic roller body (25, 26) run across working surfaces that narrow conically towards the front end of the picking rollers (10, 11) and these working edges confine the through slot (36) between themselves or with the basic roller body (25, 26) of the neighboring picking roller (10, 11). To further improve the efficiency of picking, the axes

[1] Numbers in the margin indicate pagination in the foreign text.

of rotation (34, 35) of the picking rollers (10, 11) are designed to converge in the direction of the front side of the picking rollers (10, 11).

Apparatus for harvesting maize

The invention concerns an apparatus for harvesting maize and similar cereals particularly as an attachment for combine harvesters or field harvesters designed in accordance with the title of claim 1.

In the case of a known instrument of this type (DE - B - 17 57 213), the picking rollers rotate about axes parallel to each other. The tapered working surface of the picking rollers accordingly creates a column right through, the width of which gradually reduces towards the base of the picking rollers.

In the case of another known instrument of this type (DE - A - 20 00 140, FR - A - 1 - 268 615), the picking rollers have a cylindrical working surfaces. The axes of rotation of the picking rollers diverge towards the front end of the picking rollers whereby a column is created with breadth gradually reducing towards its rear end.

In the case of yet another instrument of this type (DE - C - 39 18 362), the picking rollers have a cylindrical working surfaces. The axes of rotation of the picking rollers in this case are located parallel one below the other producing a through slot with a breadth consistent right through. When milling the harvested cereals, a cutting device with a rotating blade is designed below the picking rollers.

The invention deals with the problem of creating an harvesting device of the type mentioned in the beginning and aims at designing an apparatus that would pick the harvested crop carefully without affecting its quality and at the same time ensuring the least possible wear of the picking rollers. /2

The invention solves the problem by designing the harvesting machine with the characteristics stated in claim 1. With regard to further developments, claims 2 to 9 are used as reference.

The axes of rotation of the picking rollers are designed such that they converge in the direction of the front end of the rollers. This enables the conical form of the picking rollers to be freely chosen to configure the desired speed of draught of harvest through the transit slot and its inclination for the required quality of the harvest, leaving the desired

configuration of the transit slot unchanged. Accordingly the diameter at the approach on the front side of picking rollers can be set to a comparatively lower value during the working cycle with a correspondingly lower circumferential velocity. As a result of this the harvested stalk can be gently drawn out and slippage along with wear on the front end of the picking rollers is reduced considerably. The picking rollers can be set to an approach angle in coordination with the angle of convergence of the axes of rotation. The approach may be set to obtain a greater increase in diameter of the working circle of the picking rollers, which in turn results in a sharp increase in circumferential velocity of the working area of the picking rollers towards the delivery end of the through slot. This increase in the velocity, which preferably is about 50% helps to pick the grains gently but at a higher speed. Alternatively, it shortens the performance of the picking rollers maintaining the same harvesting speed.

The following description and the schematic representation of a possible design of the subject of the invention clearly /3 illustrate the other details and effects. The drawing shows:

Figure 1: A side view of a combined harvester with a harvesting device used as an attachment as per the invention.

Figure 2: A top view of the harvesting device stated in Figure 1.

Figure 3: An enlarged side view of the harvesting device.

Figure 4: A picking unit of the harvesting device shown in Figure 2, as seen from the bottom.

Figure 5: A side view of the Figure 4.

Figure 6: A front view of the Figure 4.

Figure 1 illustrates a device 1 for harvesting maize or similar cereals and forms an attachment of a combined harvester 2 or a field harvester or is also used as an independent unit such as an add-on instrument. In the example of design represented, the harvesting device is mounted before the conveyor 3, designed to carry the harvest such as maize corn the processing unit of the combined harvester 2 supported on wheels 4 at the bottom.

The harvesting device 1 consists particularly of a machine framework 5, a helical cross-conveyor 6, covers 7, dividing peaks 8, out of which four picking units 9 are illustrated in Figure 2.

/4

As is seen particularly from figures 4 to 6, each of the picking units 9 includes is made up of two picking rollers 10, 11, which

are driven by the gears 12, 13. The picking plates 16, 17, supported by the longitudinal carriers 14, 15 are mounted above the picking rollers 10, 11. Feed chains 18, 19 consisting of carriers 20 are mounted over these plates and they are driven inwards in the opposite directions.

A chopping unit 21 can be designed under the picking rollers 10, 11 of a picking unit 9. This chopper chops the stalk of the harvest when passing through the picking rollers 10, 11. In case of the chopper represented in the drawing, it has rotating blades 22 but it can have any other suitable design as well.

At their front end, the picking rollers 10, 11 carry the feed screws 23, 24. These rollers 10, 11 have a conical shaped basic roller body 25, 26 having longitudinal ridges 29, 30 limited by the working edges 27, 28. Picking rollers 10, 11 are mounted on both the sides of a picking slot 31 formed by the picking plates 16 and 17. During operation, these picking rollers 10, 11 rotate around the axes of rotation 34, 35 in the direction of displacement F shown by the arrows 32 and 33 in Figure 6. The axes of rotation 34, 35 are designed to converge in the direction of the front side of the picking rollers 10, 11. As a result of convergence of the axes of rotation 34, 35, the picking rollers 10, 11 have a conical structure, which can be chosen exclusively with regard to the desired increase in the circumferential

velocity of the conical working surfaces ranging from the working edges 27, 28 of the picking rollers 10, 11 in the direction of the to the delivery end of the through slot 36 formed between the picking rollers 10, 11.

In the example of the design illustrated (Figure 6), the working edges 27 of one of the picking rollers 10 are separated from the working edges 28 of the other picking roller 11 by a gap and the working edges 27 and 28 define the through slot 36 when going

/5

through the process of setting the angle with the least distance from the basic roller body 25, 26 of the neighboring picking roller with its surface shell. The breadth of the through slot 36 formed in this manner between the picking rollers 10, 11 can measure from 6 to 15 mm at the front ends of the picking rollers 10, 11 and from 2 to 10 mm at their base ends. However widths preferred would be 8 to 12 mm at the front ends and 3 to 6 mm at the base ends.

In a modified version, when setting the angle with the least possible distance from the neighboring picking roller, the working edges 27 and 28 of both the picking rollers 10, 11 can lie exactly opposite to the working edges of the neighboring picking roller and are hence limited within the through slot 36. In this design, the width of the through slot 36 between the

picking rollers 10, 11 is essentially constant and lies between 1 and 10 mm. However 3 to 5 mm may be preferred.

The basic roller body 25, 26 of the picking rollers 10, 11 has a conical shell and the longitudinal ridges 29, 30 carrying the working edges 27 and 28, have a constant height all along their length, so that the working surface of the picking rollers 10, 11 defined by the working edges 27 and 28 surrounds the coating shell of the basic roller body 25, 26, the distance between the two however tapering towards one end. The diameter of the working surfaces measures 75 to 125 mm on the front end of the picking rollers 10, 11 but 90 to 110 mm is preferable. The length of the picking rollers generally measures between 400 and 600 mm.

Patent Claims

1. A device for harvesting maize and similar cereals particularly as an attachment for combined harvesters (2) or field harvesters designed with two picking rollers (10, 11) mounted on both the sides of a picking slot (31) and rotating about the axes of rotation (34, 35) in the direction of displacement (F) of the device (1) and provided with several longitudinal ridges (29, 30), ribs or similar protuberances mounted on the working edges (27, 28)

of the picking rollers (10, 11) over their basic roller body (25, 26) resulting in the working edges (27, 28) of the picking rollers (10, 11) widely distributed over the basic roller body (25, 26) running across working surfaces that narrow conically towards the front end of the picking rollers (10, 11) and these working edges confining the through slot (36) between themselves or with the basic roller body (25, 26) of the neighboring picking roller (10, 11) is characterized by the fact that the axes of rotation (34, 35) are designed to converge in the direction of the front side of the picking rollers (10, 11).

2. **The device as per claim 1** is characterized by the fact that the basic roller body (25, 26) of the picking rollers (10, 11) have a conical coating shell which is coaxial with the conical working surfaces making the two surfaces concentric.

3. **The device as per claim 1 or 2** is characterized by the fact that the working edges (27) of one of the picking rollers (10) are separated from the working edges (28) of the other picking roller (11) by a gap and the working edges (27 and 28) define the through slot (36) when going through the process of setting the angle with the least distance from the basic roller body (25, 26) of the neighboring picking

roller with its surface shell.

/7

4. **The device as per one of the claims 1 to 3** is characterized by the fact that when setting the angle with the least possible distance from the neighboring picking roller, the working edges (27 and 28) of both the picking rollers (10, 11) can lie exactly opposite to the working edges of the neighboring picking roller and are hence limited within the through slot (36).

5. **The device as per one of the claims 1 to 4** is characterized by the fact that the conical form of the working surfaces the picking rollers (10, 11) and the angle of convergence of the axes of rotation (34, 35) are so coordinated that the rotational velocity of the working surfaces the picking rollers (10, 11) increases from the front end towards the base end by at least 25%, preferably by 50%.

6. **The device as per claim 3** is characterized by the fact that breadth of the through slot (36) formed between the picking rollers (10, 11) can measure from 6 to 15 mm at the front ends of the picking rollers (10, 11) and from 2 to 10 mm at their base ends. However widths preferred would be 8 to 12 mm at the front ends and 3 to 6 mm at the base ends.

7. The device as per claim 4 is characterized by the fact that the width of the through slot (36) between the picking rollers (10, 11) is essentially constant and lies between 1 and 10 mm. However 2 to 5 mm may be preferred.

/8

8. The device as per one of the claims 1 to 7 is characterized by the fact that diameter of the working surfaces measures 75 to 125 mm on the front end of the picking rollers (10, 11) but 90 to 110 mm is preferable.

9. The device as per one of the claims 1 to 7 is characterized by the fact that a chopping unit (21) is assigned to the picking rollers (10, 11).

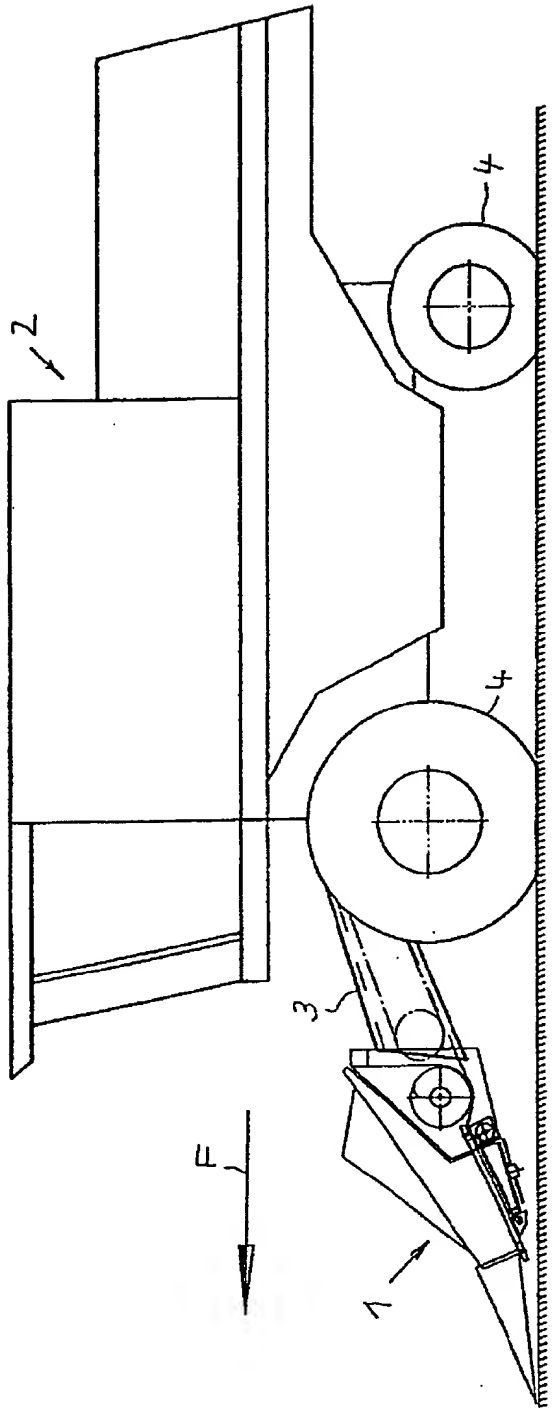

Fig. 1

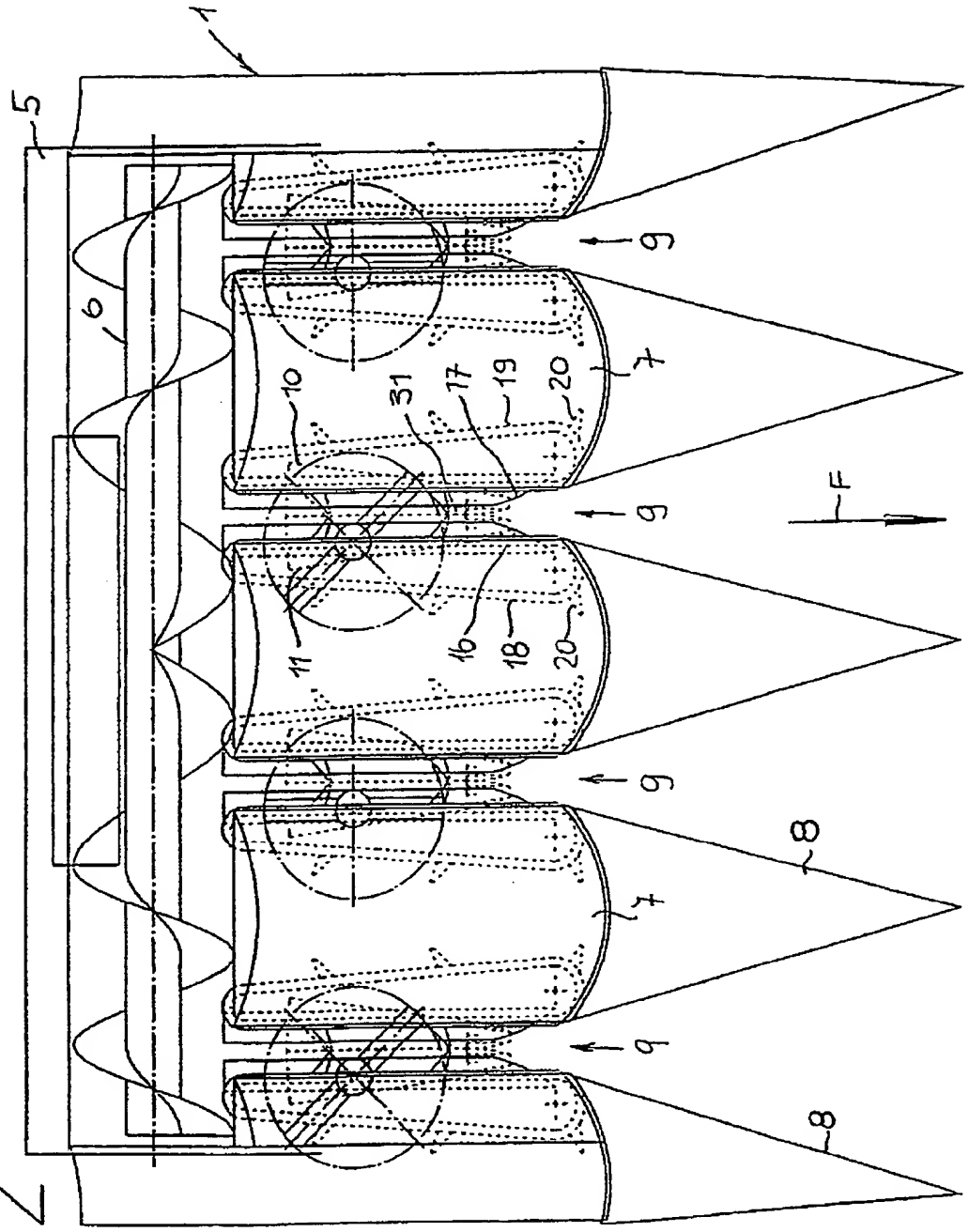

Fig. 2

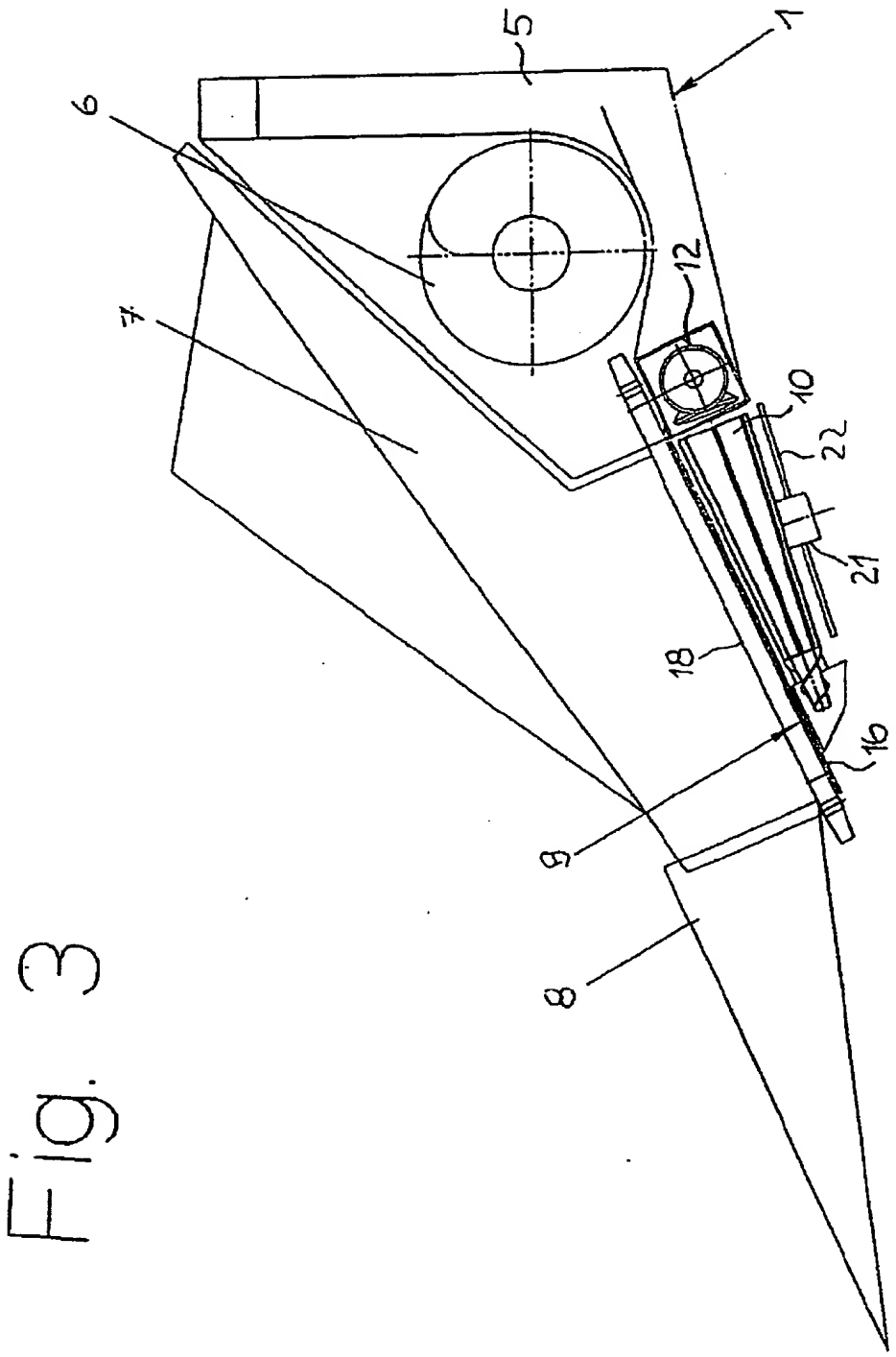

Fig. 3

Fig.6

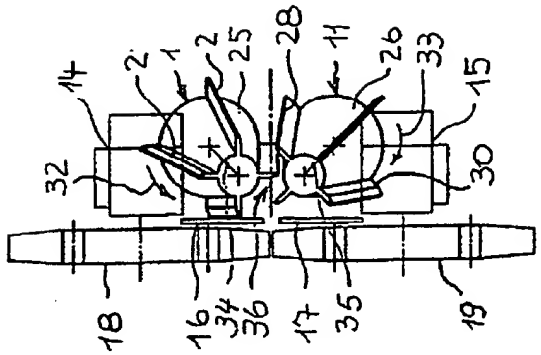

Fig. 4

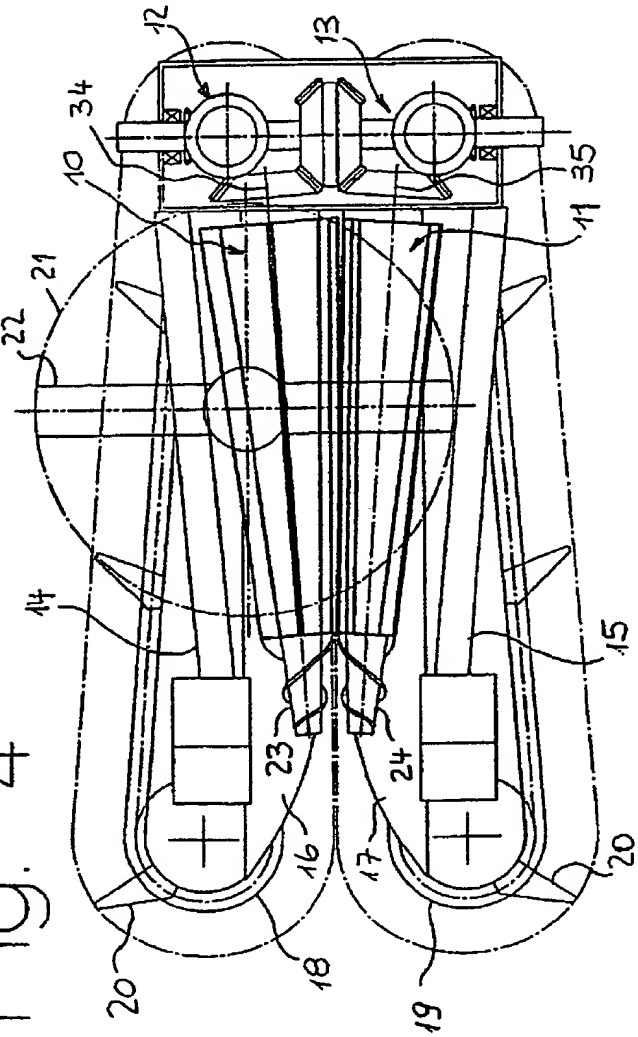

Fig.5